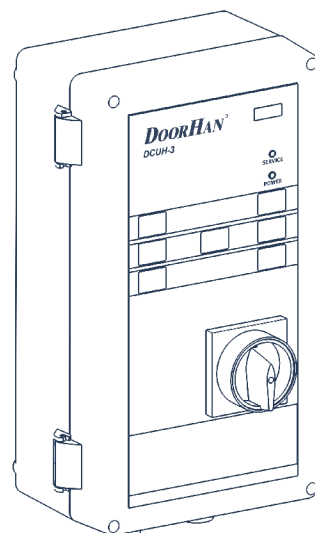
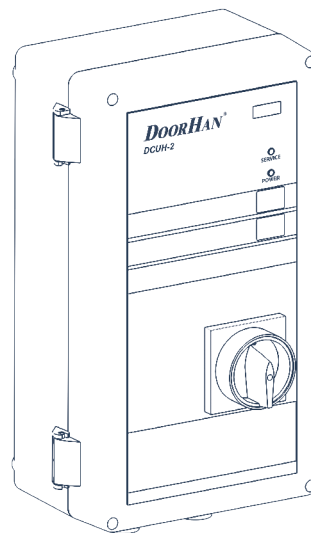


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DCUH-2/3 Control Unit for Electro-Hydraulic Dock Leveler with Hinged Lip



1. GENERAL INFORMATION

DCUH-2, DCUH-3 control units operate electro-hydraulic dock levelers with hinged lip of DLHH/DLHHI series.

The units are equipped with an uncontrolled movement protection system, which is activated if the dock leveler

was halted in the event of a potential emergency or if power supply failed.

After all the necessary connections, the unit is ready for operation.

Table 1.1. Control units options

Options	DCUH-2	DCUH-3
Automatic return to stored position by pressing the P button	▪	▪
Supply voltage, 380-415 V/50-60 Hz	▪	▪
External traffic light	▪	▪
Internal traffic light	▪	▪
Dock leveler lighting	▪	▪
Leveler locking when door is closed (interlock)	▪	▪
Door locking when leveler is open (interlock)	▪	▪
Connection of additional safety devices	▪	▪
Service indicator	▪	▪
Menu screen (LCD display)	▪	▪
Door control		▪
Inflatable dock shelter control		▪

Table 1.2. Control units specifications

Parameters	Value
Supply voltage	380-415 V/50-60 Hz
Control voltage	24 VDC
Max. power of the hydraulic station	1,5 kW
Operating temperature	-20...+50 °C
Dimensions (W × H × D)	195 × 355 × 165 mm
Protection class	IP54

2. SAFETY RULES

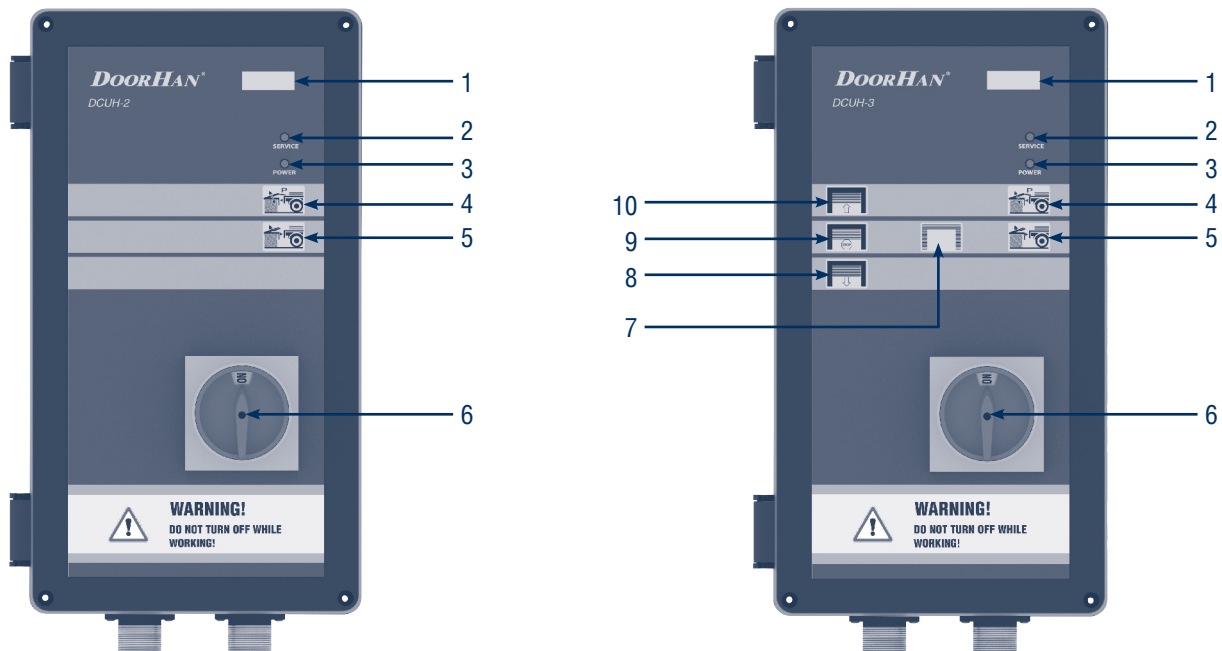
⚠ WARNING!

Carefully follow all the instructions specified herein. Failure to do so could cause equipment damage and/or personal injury!

- Use the control unit only for its intended purpose, any other use is prohibited.
- The manufacturer assumes no liability for damage or injury to persons or property which occur as a result of failure to observe safety rules specified herein or incorrect use of the control panel.
- Only trained personnel should install, operate or service this equipment.
- Correct operation of the control unit can only be guaranteed if the supply voltage complies with the specified in the instructions.
- Prior to first actuation of the control unit, make sure that all electrical connections are securely fastened and insulated, safety devices are installed and ready for use.

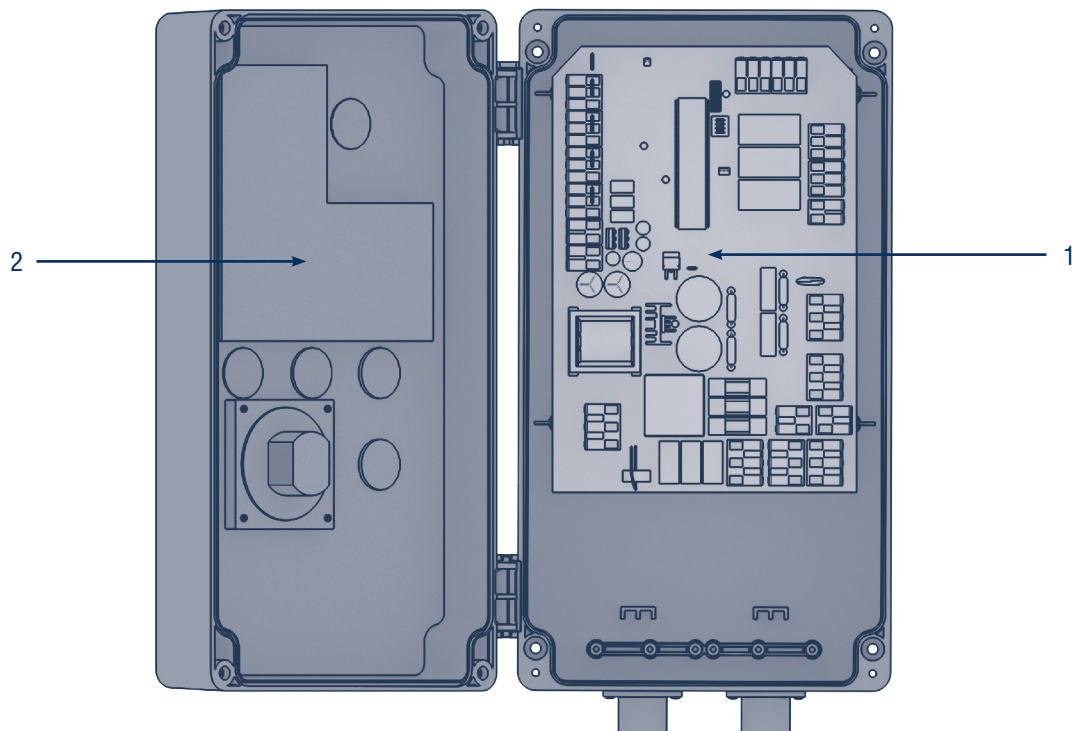
3. DESIGN

Fig. 3.1. Closed view



- | | |
|------------------------------------|---|
| 1. Menu screen (LCD display) | 6. Main power switch |
| 2. Service indicator | 7. Inflatable dock shelter control button |
| 3. Power indicator | 8. Door CLOSE button |
| 4. Dock leveler parking button (P) | 9. Door STOP button |
| 5. Dock leveler RAISE button | 10. Door OPEN button |

Fig. 3.2. Open view

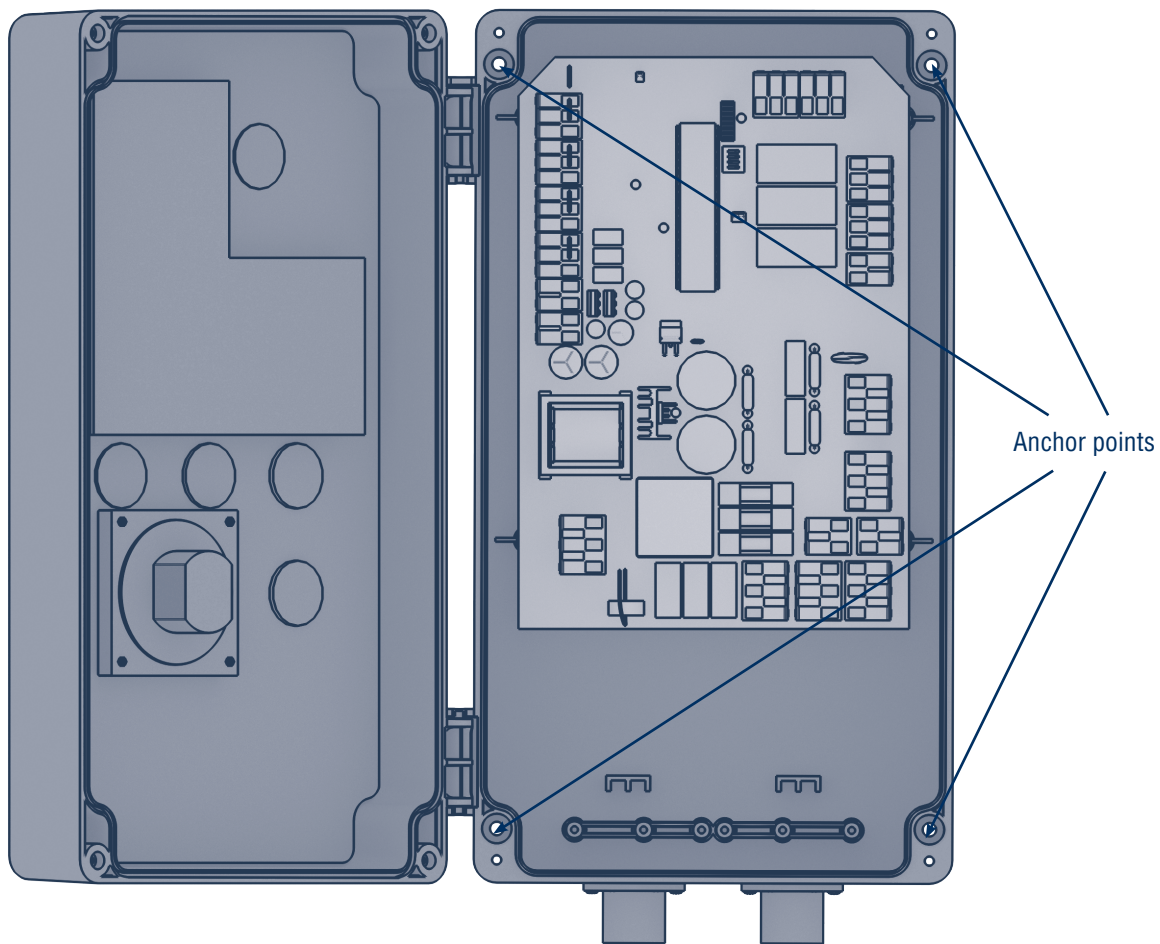


1. Main board
2. Control board

4. INSTALLATION

Mount the control unit so the distance between control unit bottom and dock floor is approximately 1–1,5 m. Choose the fasteners corresponding to the type of wall.

Fig. 4.1. Control unit installation



5. ELECTRICAL CONNECTIONS

⚠ WARNING!

Before performing electrical connection of the control unit disconnect all electric power and ensure it won't be supplied during the work.

Fig. 5.1. Electrical connections diagram

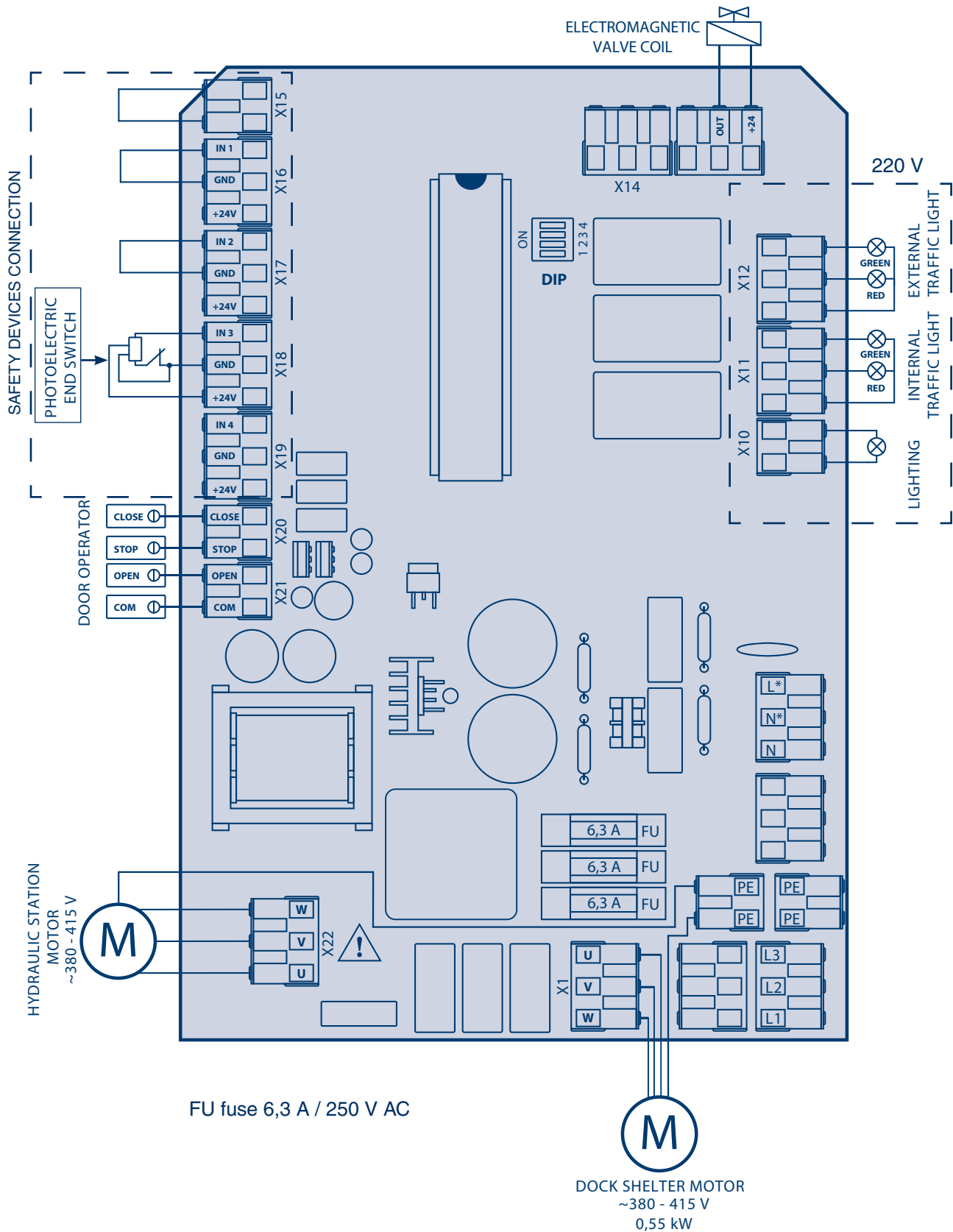


Fig. 5.2. 380-415 V mains connection

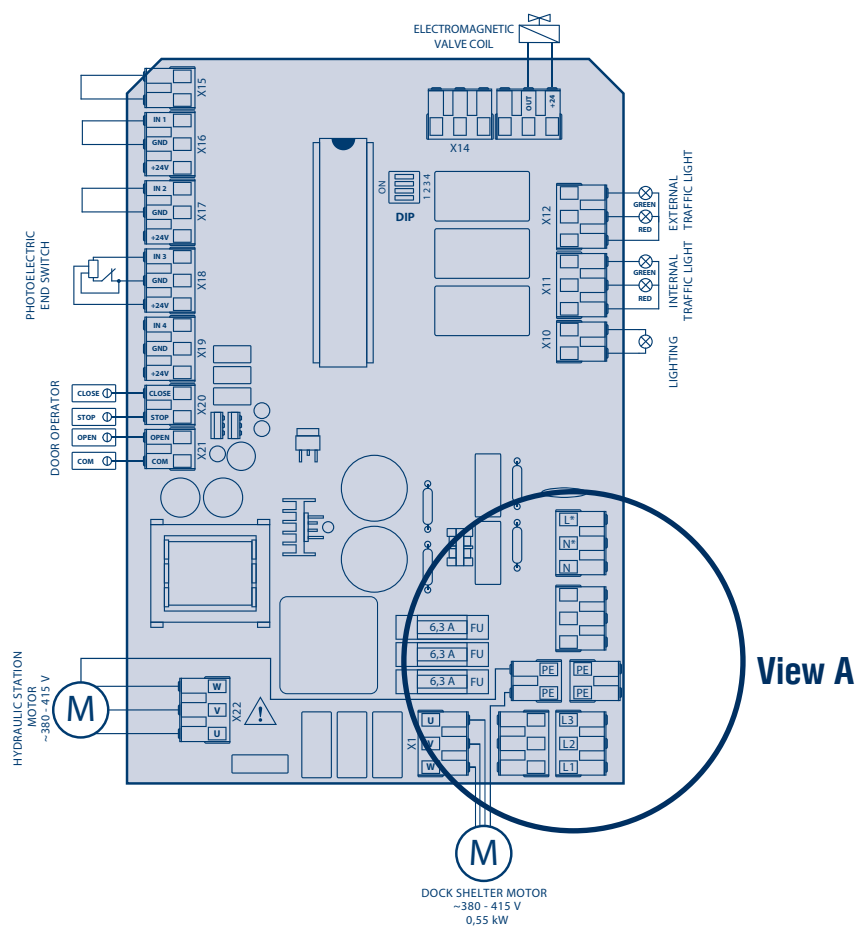


Fig. 5.2.1. View A. Power supply connection

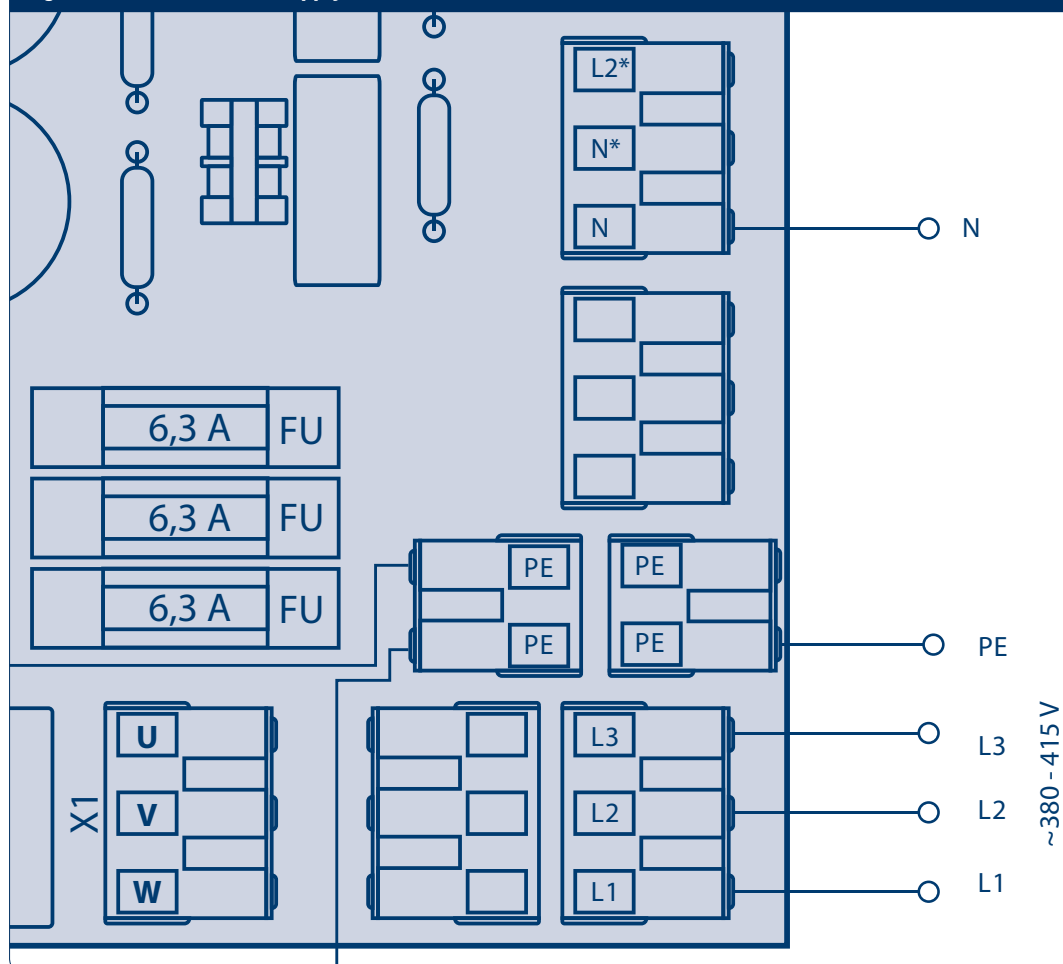


Fig. 5.3. Connection of lip inductive position sensor (part number: 1747-22)

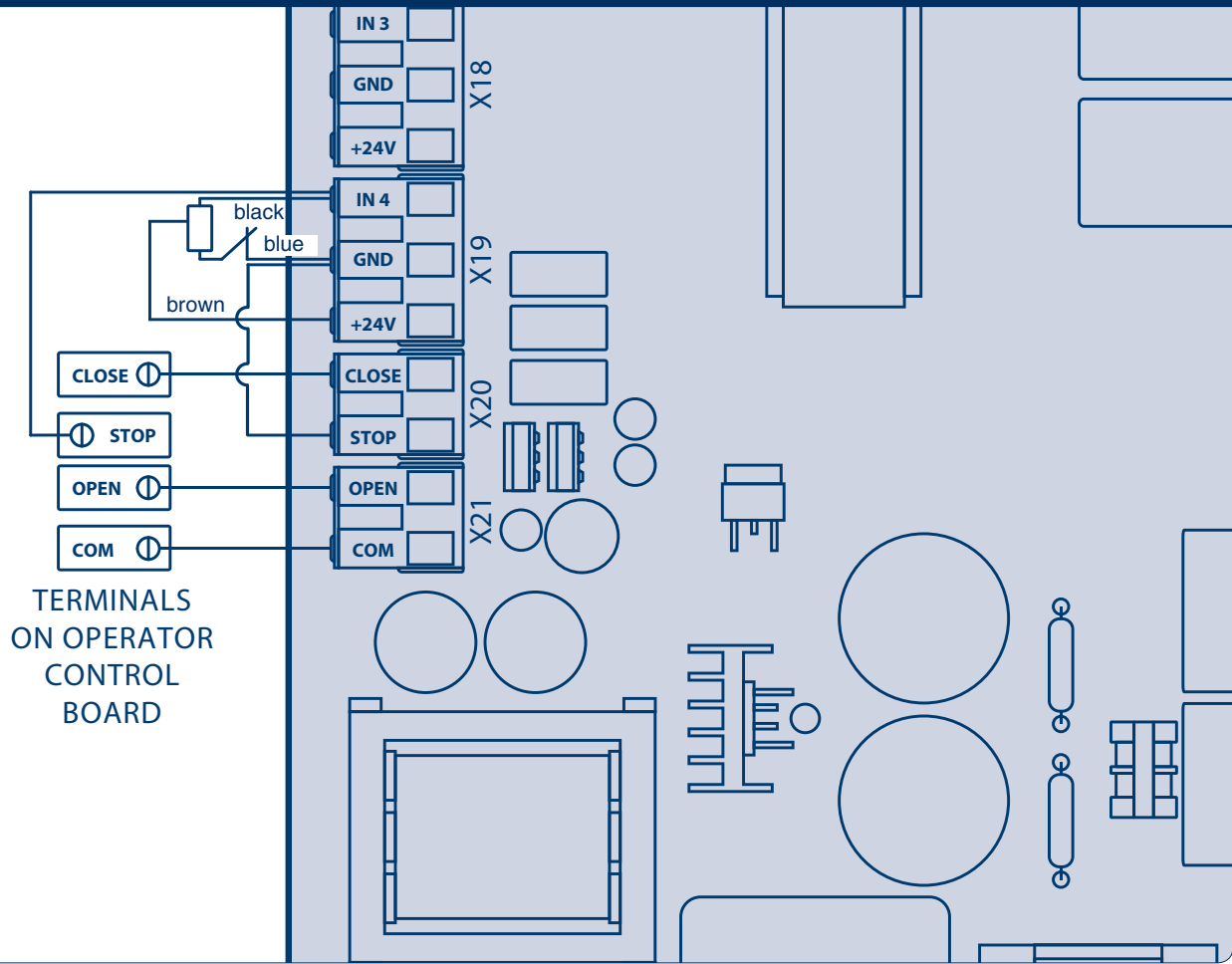


Fig. 5.4. Connection of photoelectric end switch

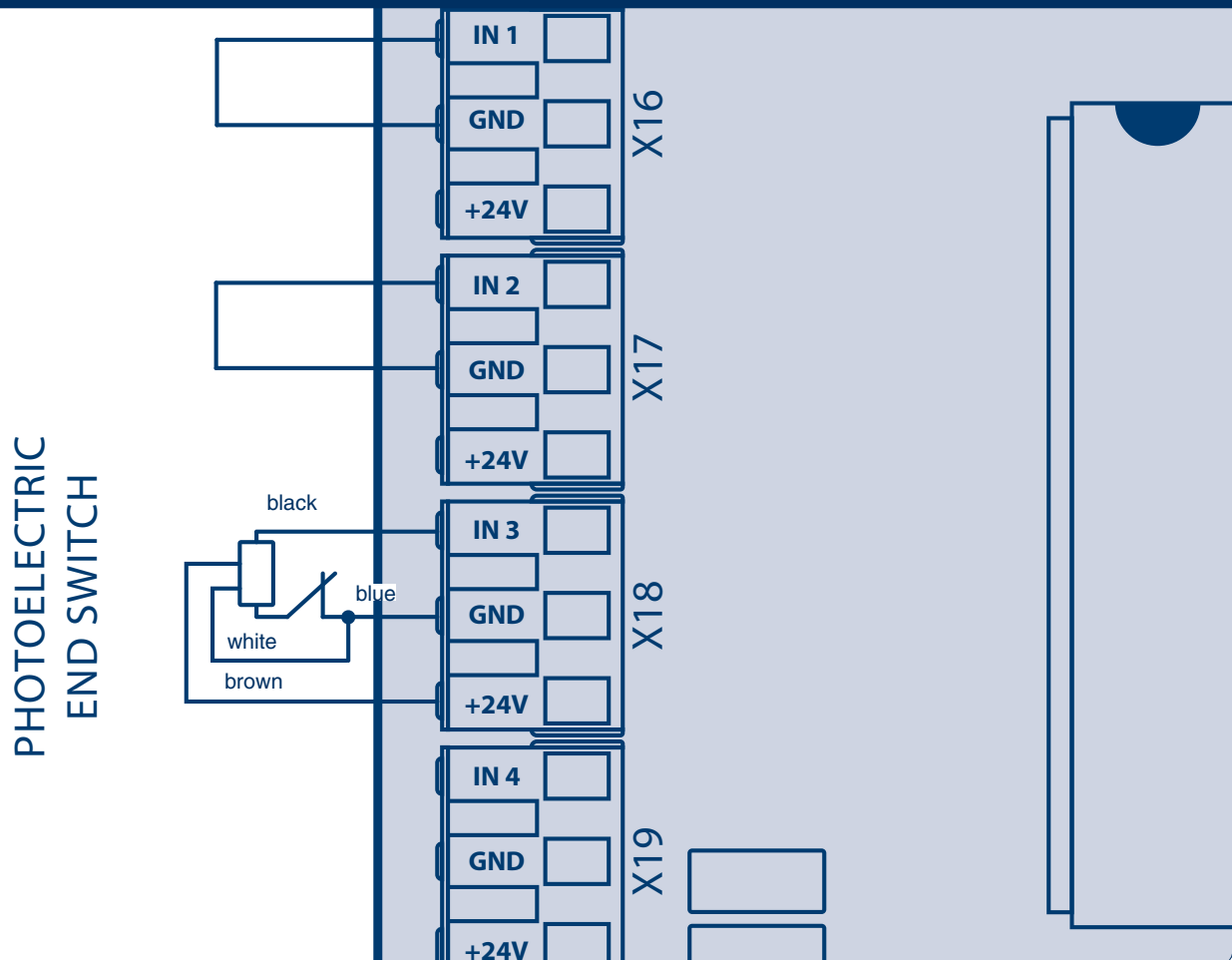
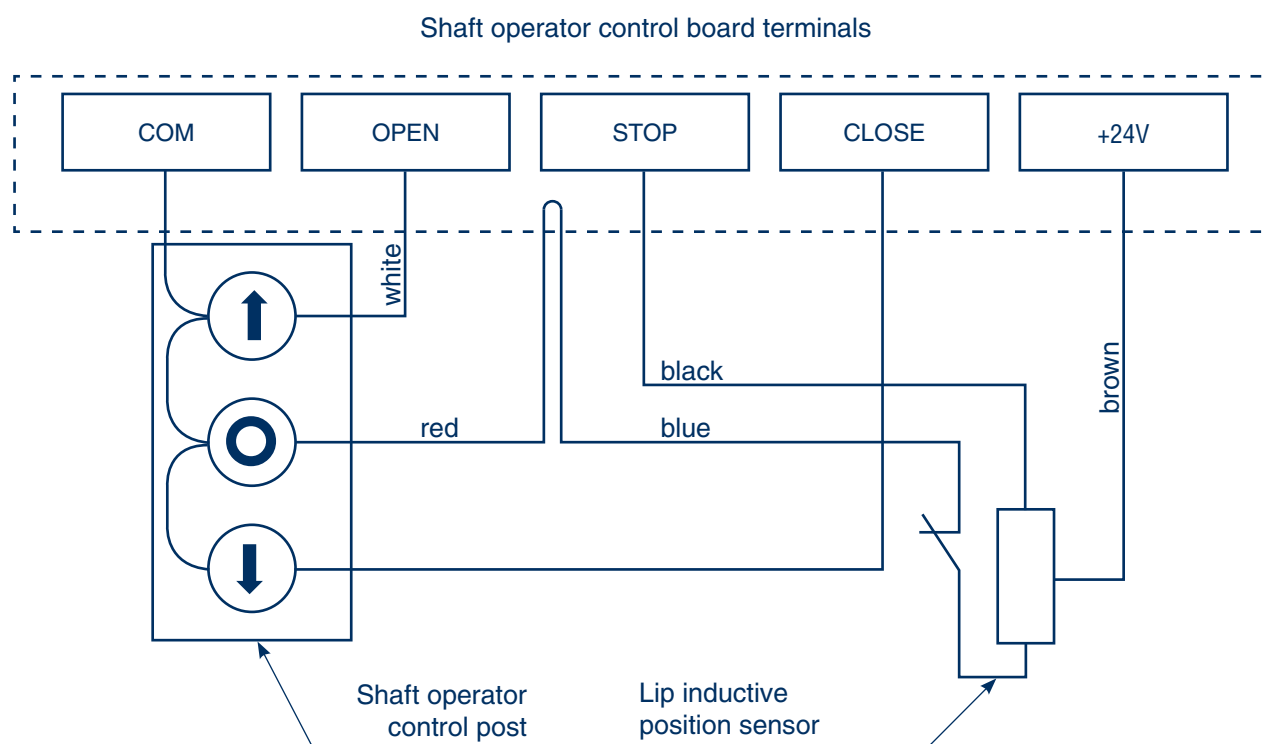


Fig. 5.5. Connection scheme of lip inductive position sensor for DCUH-2 control unit*



* Connection scheme refers to DoorHan operators of Shaft series only.

6. PROGRAMMING

6.1. DIP SWITCHES

DIP switches are used to switch between the operating modes of the control unit board.

⚠ WARNING!

- Prior to switching between the operating modes turn the power supply OFF.
- When using the device for the first time make sure the DIP switches 1 and 2 are in correct position.

Table 6.1.1. DIP switches operation

DCUH-2 operating mode	DCUH-3 operating mode
DIP 1 = Off	DIP 1 = Off
DIP 2 = Off	DIP 2 = On
DIP 3 is used to enter the advanced menu. DIP 3 = Off (main menu) DIP 3 = On (advanced menu)	DIP 3 is used to enter the advanced menu. DIP 3 = Off (main menu) DIP 3 = On (advanced menu)
DIP 4 is not used	DIP 4 is not used
Menu screen shows dH2	Menu screen shows dH3

In DCUH-2 mode each operation of the door and dock leveler is displayed on the menu screen accordingly (see Table 6.1.2).

Table 6.1.2. LCD display indication in DCUH-2 mode

Dock equipment	Menu screen message	Operation
Dock leveler	PUP	Leveler rising
	Pdn	Leveler lowering

In DCUH-3 mode each operation of the door and dock leveler is displayed on the menu screen accordingly (see Table 6.1.3).

Table 6.1.3. LCD display indication in DCUH-3 mode

Dock equipment	Menu screen message	Operation
Door	GUP	Door rising
	Gdn	Door lowering
	GSt	Door stopping
Dock leveler	PUP	Leveler rising
	Pdn	Leveler lowering

If it is time to perform maintenance, the operation indication is blocked, the SEr message is constantly displayed on the menu screen and the service led is lit. In order to remove a service tick enter the advanced programming menu. The same applies to the faults indication: if a fail-

ure occurs during operation, EX message will be displayed before the system is de-energized, where X is the fault number. The number of the last fault may be viewed in the advanced programming menu.

6.2. TO ENTER PROGRAMMING MENU

In order to enter the programming menu turn the main power switch ON. Make sure the power indicator is lit, then press and release the RAISE button. After that press the P and RAISE buttons simultaneously and hold for 5 seconds.

Flashing UH message on the menu screen confirms you have successfully entered the programming menu.

Table 6.2.1. Parameters of the DCUH-2 programming menu

Message	Setting option	Description
1. UH	Parameter value 1–9 — 3–11 sec. Default value — 7 sec. Change of value by 1 equals 1 sec.	Time period in which hydro station motor stops during leveler raising
2. UC	Parameter value 1–9 — 5–21 sec. Default value — 13 sec. Change of value by 1 equals 2 sec.	Leveler lowering time in auto parking mode
3. Hd	Parameter value 1–9 — 2,5–6,5 sec. Default value — 4,5 sec. Change of value by 1 equals 0,5 sec.	Leveler raising time at the last stage of parking
4. AF	Parameter value 1–9	Operating threshold of the leveler stop function during leveler raising mode only
5. Ar	(Y/n), default value — Y	Activation of auto parking function
6. CXX	(0–99)	Cycles counter / 1000
7. SXX	(0–99)	Service counter
8. EXX	(0–99)	Indication of the last equipment failure: E00 — no equipment failures during the whole period of operation; E01 — usage error; E03 — short circuit in hydraulic station motor winding; E04 — control board short circuit
9. rS(1)	(Y/n), default value — n	Reset of service mode

Table 6.2.2. Parameters of the DCUH-3 programming menu

Message	Setting option	Description
1. UH	Parameter value 1–9 — 3–11 sec. Default value — 7 sec. Change of value by 1 equals 1 sec.	Time period in which hydro station motor stops during leveler raising
2. UC	Parameter value 1–9 — 5–21 sec. Default value — 13 sec. Change of value by 1 equals 2 sec.	Maximum leveler lowering time in auto parking mode
3. Hd	Parameter value 1–9 — 2,5–6,5 sec. Default value — 4,5 sec. Change of value by 1 equals 0,5 sec.	Leveler raising time at the last stage of parking
4. AF	Parameter value 1–9	Operating threshold of the leveler stop function during leveler raising mode only
5. dL	(Y/n), default value — n	Automatic closing of the door after the leveler is parked
6. Ar	(Y/n), default value — Y	Activation of auto parking function
7. CXX	(0–99)	Cycles counter / 1000
8. SXX	(0–99)	Service counter
9. EXX	0–99	Indication of the last equipment failure: E00 — no equipment failures during the whole period of operation; E01 — usage error; E03 — short circuit in hydraulic station motor winding; E04 — short circuit on control and display board
10. SL	(Y/n), default value — Y	Inflatable dock shelter operation
11. Sb	Parameter value 1–9 — 17–35 sec. Default value — 25 sec. Change of value by 1 equals 2 sec.	Deflating time of the dock shelter
12. Gd	Parameter value 1–9 — 2–18 sec. Default value — 10 sec. Change of value by 1 equals 2 sec.	Time of automatic closing of the door after the leveler is parked
13. rS (1)	(Y/n), default value — n	Reset of service mode

Item 1 is available until the service mode is reset.
Items 1–6 refer to main programming menu while items 7–13 — to advanced programming menu.

Navigation through the menu is carried out by the RAISE and P buttons. RAISE button is used to switch between the parameters, and P button changes the value of the parameter.

6.3. TO EXIT THE PROGRAMMING MODE

The device automatically exits the programming mode and saves the changed values after setting the parameter of

the last menu item and pressing the RAISE button.

6.4. PROGRAMMING OF DOCK LEVELER AND SECTIONAL DOOR OPERATION

There are three variants of operation of dock leveler and sectional door.

Variant 1. Dock leveler auto parking is OFF, door auto closing is OFF.

Set the following values for parameters 5 and 6 in programming menu (see table 6.2.2):

- choose n value for parameter 5;
- choose n value for parameter 6.

Variant 2. Dock leveler auto parking is ON, door auto closing is OFF.

Set the following values for parameters 5 and 6 in programming menu (see table 6.2.2):

- choose n value for parameter 5;
- choose Y value for parameter 6.

Variant 3. Dock leveler auto parking is ON, door auto closing is ON.

Set the following values for parameters 5 and 6 in programming menu (see table 6.2.2):

- choose Y value for parameter 5;
- choose Y value for parameter 6.

7. CONTROL UNIT OPERATION

7.1. TO RAISE THE LEVELER

1. Park the transport vehicle with an open body in front of the leveler so that it is positioned squarely against dock bumpers.
2. Chock the vehicle wheels to prevent accidental departure.
3. Turn the main power switch ON to operate the leveler.
4. Make sure the power led on the control unit is lit, then press the RAISE button.
5. Keep the RAISE button pressed until the leveler deck is fully raised and the lip is extended. Then release the button and wait till the leveler deck lowers on the vehicle bed. The lip should have a minimum of 100 mm overlap on the vehicle bed surface.

⚠ WARNING!

Keep the main power switch ON till the leveler stops working and returns to the stored position!

7.2. TO STORE THE LEVELER

When loading or unloading is finished resume the stored position of the dock leveler by pressing and holding the RAISE button until the lip folds vertically downwards. Then release the RAISE button and wait till the leveler returns to the stored position. After that turn the main power switch OFF.

Auto parking of the leveler:

Press the P button briefly. Wait till the dock leveler resumes the stored position. After that turn the main power switch OFF.

7.3. EMERGENCY STOP

Should any emergency arise halt the dock leveler in place by turning the main power switch OFF.

⚠ WARNING!

To resume operations turn the main power switch ON and press RAISE button shortly.

8. TROUBLESHOOTING

Table 8.1. Possible faults, their causes and solutions

Symptom	Possible cause	Solution
Leveler does not rise (pump does not rotate)	No supply voltage	Check the electrical wires and the voltage in the socket
	Faulty power switch	Replace main power switch
	Blown fuse	Replace fuse (FU)
	Faulty contactor	Replace main board
	No power to the contactor coil	Replace main board
	No jumper on terminals for safety devices	Set the jumpers to X15, X16, X17, X18
	Lip inductive position sensor or photoelectric sensor is open	Check both sensors
	Faulty control buttons	Replace control board
Leveler does not rise (pump rotates)	Incorrect phasing	Swap any two phases in the control unit
Leveler does not lower	No power to the electromagnetic valve coil	Check wiring from control unit to coil. Check coil voltage (24 VDC)
		Replace main board
	Faulty electromagnetic valve coil or valve	Replace coil or valve

APPENDIX. RECOMMENDED SPARE PARTS

Fig. 1. Control unit design

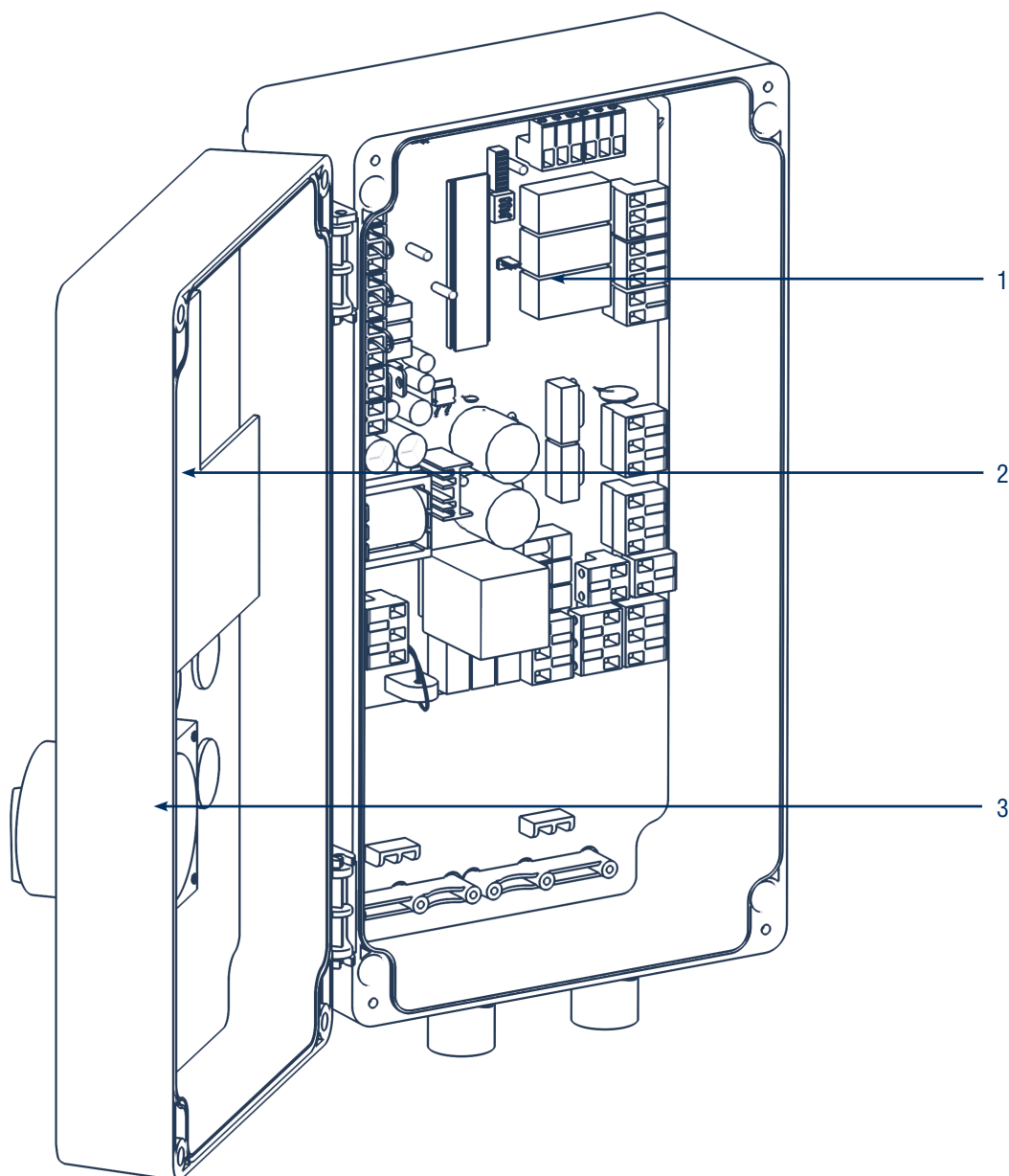


Table 1. Spare parts for the control unit

#	Part name	Part number
1	DCUH-2 main board	PCB_DCUH2-M/V.1.1
	DCUH-3 main board	PCB_DCUH3-M/V.1.1
2	DCUH-2 control board	PCB_DCUH2-BT/V.1.0
	DCUH-3 control board	PCB_DCUH3-BT/V.1.0
3	Switch assembly	DCU007

Table 2. Connecting cables to the dock leveler control unit*

#	Part name	Length	Part number
-	Connecting cable for DCUH-1/2/3 control units	7 m	DKHL02-2
-	Connecting cable for DCUH-1/2/3 control units	10,5 m	DKHL02-3

* Cables are connected to hydraulic stations and supplied with the dock levelers.

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